

DESIGN OF ALTERNATIVE PLANS

With the information from the alternative screening, the study team is moving forward with the detailed development of alternatives. This effort is a more detailed investigation of the remaining alternatives, following the six steps identified above.

As part of this process, the team is continuing to study the existing conditions; to identify existing problems; to forecast future conditions; and to evaluate how the proposed alternatives could affect the environment so that adverse impacts can be avoided or minimized to the greatest extent.

These studies include data collection for existing and historical conditions, and modeling studies to help determine how future conditions will impact the study area. These are being done in the following categories:

- **Natural Resources.** The study team is conducting habitat studies of the FIMP study area. These will provide a natural resources baseline to determine potential impacts of storm damage reduction alternatives; to develop strategies that avoid or minimize adverse impacts; and to develop opportunities for enhancing natural resources, valued habitats and recovery of endangered species.
- **Coastal Processes.** These include a combination of data collection, data interpretation, and numerical modeling. The data collection and interpretation are used to evaluate the existing environment and historic trends. The numerical models are used to extrapolate these historic trends to project future conditions. The study team is using the most up-to-date coastal modeling techniques to gain a better understanding of the complex coastal system, so the effects of alternatives can be understood and compared.
- **Socio-economics.** The study team is evaluating the vulnerability of existing development, development trends, and recreational use in the study area. This will allow the Corps to examine potential social and economic impacts of proposed storm damage reduction measures.

The team has involved broad scientific participation for each of these studies. Composed of Federal, New York State and local experts, the Technical Management Groups have been established to provide oversight and direction to the on-going investigations. In addition, independent scientific experts are reviewing the studies to verify methodology, assumptions and results.

PLAN OPTIMIZATION

Based on the outcome of the detailed design, this phase of the analysis involves the combination and final refinement of the plan alternatives, leading to the selection of the final plans. This phase fully integrates the physical, social, economic and natural resources investigations to support the selected plans.

PUBLIC PARTICIPATION

The Corps of Engineers welcomes comments from the public throughout the planning process. Information on the Reformulation Study is available on-line at the USACE New York District web site: <http://www.nan.usace.army.mil/business/prjlinks/coastal/fi2mntk/index.htm>

The documents referenced in this newsletter can also be obtained through our office. For more information, please contact: Clifford Jones, Project Manager, U.S. Army Corps of Engineers, Division of Programs and Project Management, 26 Federal Plaza, Room 2127, New York, NY 10278-0090.



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FIMP Fire Island Inlet to Montauk Point Reformulation Study

FIMP FOCUS: Alternatives

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This issue of FIMP FOCUS discusses how storm damage reduction alternatives are being developed, evaluated and selected for the Fire Island Inlet to Montauk Point Reformulation Study.

Next FIMP FOCUS: Environmental Investigations

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INTRODUCTION AND STUDY PURPOSE

The purpose of the on-going Fire Island to Montauk Point (FIMP) Reformulation Study is to identify, evaluate and recommend long-term solutions for hurricane and storm damage reduction for homes and businesses within the floodplain extending along 83-miles of ocean and bay shorelines from Fire Island Inlet to Montauk Point. This area extends as far landward in some locations as Sunrise Highway and Montauk Highway. The study area also includes 26 miles of the Fire Island National Seashore, which is under the jurisdiction of the National Park Service.

Congress and New York State have asked the United States Army Corps of Engineers (Corps) to develop a comprehensive long-term plan of protection for areas that are prone to flooding, erosion and other storm damage. This plan would replace the numerous uncoordinated measures that have been used to protect individual properties with a comprehensive management approach that considers the entire coastal system. The objective of the study, therefore, is to evaluate and recommend a long-term, comprehensive plan for storm damage reduction, which maintains, preserves or enhances the natural resources. The New York State Department of Environmental Conservation (DEC), the Corps’ non-Federal partner, supports the Reformulation Study.

The Reformulation Study approaches the issue of storm damage along Suffolk County’s south shore in a different way than previous studies:

- It looks at the study area as a comprehensive coastal system and evaluates alternatives for their impacts at specific locations and on the entire system.
- The study team includes the participation of all concerned Federal, State and local government agencies, as well as major scientific and environmental organizations.
- It includes state-of-the-art engineering, environmental, economic and planning studies to provide information about historic conditions and to model possible future conditions. To ensure objectivity and high standards, these studies are being independently reviewed.

Steps to Develop Plans

▪ Alternative Screening

1. Screen preliminary measures.

2. Develop conceptual design for remaining measures.

3. Identify possible measures by reach.

▪ Design of Alternatives

1. Develop cohesive plans.

2. Develop more detailed design.

3. Evaluate expected performance of designs.

▪ Plan Optimization

1. Optimize and balance the structural and non-structural components.

2. Optimize the size and limits of the overall plan

THE PROCESS

The Reformulation Study will develop recommendations for a long-term storm damage reduction project and will describe potential environmental impacts and any potential mitigation requirements. These recommendations will be documented in a Reformulation Report and accompanied by an Environmental Impact Statement. The recommendations will then be implemented in coordination and partnership with Federal, state and local governments.

To develop the recommendations, the Corps is using a step-by-step planning process that will evaluate various combinations of storm damage reduction measures in different locations in the study area. This approach offers flexibility and opportunities for evaluating what works best for each location as well as for the entire study area. There are three phases of plan development:

1. Alternative screening.
2. Design of alternatives.
3. Plan optimization.

Each of these phases involves a series of steps that are undertaken to decide which plans should be developed further. Plans selected through this process will then be evaluated in greater depth in order to make the final recommendations. The steps followed in each phase include:

1. Specifying problems and opportunities.
2. Inventorying and forecasting the without-project conditions.
3. Formulating alternatives.
4. Evaluating alternatives.
5. Comparing alternatives.
6. Selecting plans.

The following sections provide an overview of how these steps are being undertaken, with a specific focus on the alternative screening.

ALTERNATIVE SCREENING

Following the six-step process, the Corps has completed the first phase in the screening of conceptual storm damage reduction alternatives (Alternative Screening Report, July 1999):

Steps 1 and 2. The study team evaluated existing storm damage problems. This was used to determine future conditions without the storm damage reduction project over 50 years. It was also used as a baseline to compare the conceptual plans.

Step 3. The study team then identified a wide range of alternative measures for consideration, including: no action, non-structural plans, beach restoration, offshore breakwaters, seawalls, groins, levees and floodwalls, interior drainage structures, removal or modification of groins, draining outlet structures at coastal ponds, storm closure gates for the inlets, inlet sand bypassing, and modification of inlet structures.

Steps 4 and 5. These conceptual alternatives were evaluated based on potential performance, design, cost, institutional constraints, environmental constraints, and potential impacts.

Measures under Consideration

▪ No Action

▪ Non-structural plans

▪ Beach restoration

▪ Beach restoration with structures

▪ Removal or modification of groins

▪ Inlet modifications or sand bypassing

▪ Combinations of these measures

Step 6. Based on the criteria used in steps four and five, and based on coordination with Federal, New York State and local agencies, and experts, the study team selected plans for further evaluation: non-structural measures, breach closure alternatives, beach restoration, beach restoration with coastal structures, removal or modification of groins, inlet modifications, and sand bypassing. These measures will be considered alone and in combination with each other.

NON-STRUCTURAL SCREENING

Based on the recommendations of agencies and experts, the study team is conducting a more comprehensive investigation of potential non-structural solutions. Since many of these measures would require implementation by local governments, local representatives have been actively involved throughout the planning process.

A non-structural Technical Management Group was established to provide oversight and direction. In addition, at a workshop held in November 2000, representatives of Federal, New York State and local governments, citizen groups, and environmental groups discussed the feasibility of different non-structural measures. This information will be used in determining which non-structural measures are appropriate for the study area. This summer, the Corps will hold meetings in the affected communities to gain more information about non-structural alternatives, and how they can be applied at the local level.